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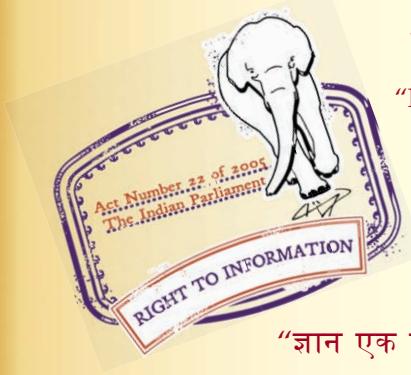
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Indian Standard

GLOSSARY OF TERMS FOR VALVES AND THEIR PARTS

PART II PLUG VALVES AND COCKS AND THEIR PARTS

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GLOSSARY OF TERMS FOR VALVES AND THEIR PARTS

PART II PLUG VALVES AND COCKS AND THEIR PARTS

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Indian Standard

GLOSSARY OF TERMS FOR VALVES AND THEIR PARTS

PART II PLUG VALVES AND COCKS AND THEIR PARTS

0. FOREWORD

0.1 This Indian Standard (Part II) was adopted by the Indian Standards Institution on 22 November 1968, after the draft finalized by the Chemical Engineering Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 This glossary of terms, which is in many parts, has been prepared for the guidance of manufacturers and users of valves to assist them in the correct interpretation of the common terms used in the valve industry and trade. It is hoped that this standard will help in establishing a generally recognized usage and eliminate ambiguity and confusion arising out of the individual interpretation of terms.

0.3 A three-digit number has been assigned to each term in this glossary. The first digit represents the number of the section under which the term comes and the last two digits represents the serial number of the term.

0.4 Figures are given after the definitions solely for the purpose of identifying the various parts of the different types of valves illustrated. The illustrations are merely examples and the purpose is not to indicate specific designs of components to which the definitions are applicable. The names of parts given in the keys to figures show the reference number used in the figures.

0.5 In the preparation of this standard considerable assistance has been derived from B.S. 2591:Part 3:1956 'Glossary for valves and valve parts (for fluids), plug valves and cocks', issued by the British Standards Institution.

1. SCOPE

1.1 This standard defines types of, and parts for, plug valves and cocks.

2. TERMINOLOGY

SECTION I PLUG VALVES

Ref No.	Term	Definition
101	Plug Valve	A form of shut-off device comprising a body with a parallel or taper cylindrical seating into which is fitted a plug which may be turned to move its port or ports relative to the body seat ports to control the flow of fluid and which incorporates design features which reduce the friction between the plug face and the body seat during turning of the plug and/or seal them against leakage.
102	Plug Valve Patterns	Plug valves are made in four patterns, with port shapes and areas as follows.
a) <i>Round Opening Pattern</i>	Having full-bore round ports in both body and plug.	
b) <i>Regular Pattern</i>	Having substantially full-area seat ports of round, rectangular or similar shape.	
c) <i>Venturi Pattern</i>	Having reduced-area seat ports, of round, rectangular or similar shape, and a body throat approaching a venturi.	
d) <i>Short Pattern Round</i>	Having substantially full-area or reduced-area seat ports of round rectangular or similar shape, with restricted face-to-face dimensions.	

TYPE OF PLUG VALVE

103	Lubricated Plug Valve	A plug valve which incorporates design features whereby lubricant is injected under pressure between the plug face and body seat. The valve may be steam-jacketed.
104	Non-lubricated Plug Valve	A plug valve which incorporates mechanical design features to reduce the friction between the plug face and body seat during turning of the plug. Common types are:

Ref No.	Term	Definition
	a) <i>Lift Plug Valve</i>	In which mechanical means are provided to lift the plug from the body seat during turning of the plug.
	b) <i>Split Plug Valve</i>	In which the plug is split and mechanical means are provided to contract the plug whilst it is being turned.

PLUG VALVE PARTS

105	Trim	A collective term relating to the materials of certain major internal components which are directly affected by the fluid or by the action of the flow thereof through the valve. Trim relates only to the following components:
-----	-------------	--

- i) Plug or plug facing,
- ii) Body seat.

Where the above components are made in materials of similar composition but not necessarily with similar mechanical properties, the valve is referred to as having a 'trim' of that specific material, for example, '13 percent chrome trim'. Where the components are of dissimilar materials, the material of each is specified separately.

106	Body	The main part of the valve in which the flow of fluid is controlled.
	a) <i>Body End Port</i>	The inlet or outlet opening at the end of the valve body.
	b) <i>Body Seat Port</i>	The inlet or outlet opening in the body seat.

NOTE 1—Port dispositions (see Fig. 6) may be:

- 1) straight-way,
- 2) three-way, and
- 3) four-way.

NOTE 2—Three-way or four-way 'trans-flow' plug valves have port dimensions such that, when the plug is in the intermediate position on being rotated to divert flow from one body seat port to another, there is no cessation of flow.

Ref No.	Term	Definition
	c) <i>Body Throat</i>	The passage-way between the body end port and the body seat port.
	d) <i>Body End</i>	That part of the body which connects the valves to the plant or installation of which the valve forms a part. It is not within the scope of this glossary to describe the type or form of the body ends.
	e) <i>Body/Cover Connections</i>	The connection of the body to the cover, generally of the bolted or screwed type.
	f) <i>Body/Cover Flange</i>	The flange on the body of a valve, to which the cover is connected.
	g) <i>Body Neck</i>	The part of the body between the body end and the main portion of the body.
	h) <i>Body Seat</i>	The seating surface in the body with which the plug face makes contact.
	j) <i>Body Boss</i>	A boss formed on the exterior of the body to provide sufficient material to permit a tapped connection.
	k) <i>Body Tapping</i>	A tapping in the body to permit an external connection.
107	Cover	That part which closes the body aperture through which access is obtained to the internal parts of the valve.
	a) <i>Cover Flange</i>	The flange which connects a bolted cover to the body/cover flange.
108	Cover Components	Those parts which are associated, but not integral, with the cover.
	a) <i>Cover Bolting</i>	Comprises bolts, stud bolts, studs, set screws and nuts used for the body cover connection.
	b) <i>Cover Gasket</i>	A component for effecting a fluid-tight joint in a body cover connection.
	c) <i>Cover Joint Ring</i>	A component for effecting a fluid tight joint in a body cover connection.

Ref. No.	Term	Definition
	d) <i>Shin</i>	A component which prevents the packing rubbing on the plug as it rotates and also prevents leakage of line fluid into the stuffing box.
109	Plug	That component which is turned within the body to control the flow of fluid.
	a) <i>Plug Face</i>	The surface of the plug or of the plug facing, which makes contact with the body seat.
	b) <i>Plug Facing</i>	A deposit of material, different from that of the plug, on which plug face is formed.
	c) <i>Plug Port</i>	The passage-way or passage-ways through the plug (see Fig. 6). These may be:
		1) straight-through, 2) tee port, 3) 'L' or angle port, and 4) double 'L' or double angle port.
	d) <i>Plug Head</i>	That part of the plug shank or stem to which the wrench or other operating device is attached.
	e) <i>Plug Shank</i>	The integral part of the plug which passes through the body or cover, and on which the plug head is formed.
110	Plug Components	Those parts which are associated, but not integral, with the plug.
	a) <i>Stem</i>	The component, not integral with the plug, which passes through the body or cover, and on which the plug head is formed.
	b) <i>Lubricant Screw</i>	A screw fitted to a lubricated plug valve to force the lubricant to the working parts of the valve.
	c) <i>Combination Lubricator</i>	A lubricant screw modified to permit alternative lubrication by gun.

Ref No.	Term	Definition
	d) <i>Lubricant Check Valve</i>	A check valve fitted to a lubricated plug valve to prevent leakage of line fluid through the lubricant feed.
	e) <i>Indicator</i>	A device to show the position of the plug ports.
	f) <i>Hub</i>	A component secured to the plug head through which the bar of a bar-operated valve passes.
111	Stuffing Box	A part of the body or cover which provides an annular space around the shank or stem to contain the gland and the gland packing.
112	Gland	A part which retains and forms a means of compressing the gland packing. Glands are usually of the screwed or bolted type, of one-piece or two-piece design.
	a) <i>Screwed Gland</i>	The type of gland which is adjusted by a nut which engages the stuffing box.
	b) <i>Gland Nut</i>	The nut of a screwed gland, by which pressure is transmitted to the gland.
	c) <i>Bolted Gland</i>	The type of gland which is adjusted by bolts, studs, set screws, etc, attached to the body or cover.
	d) <i>One-Piece Gland</i>	A bolted design in which the gland is integral with the gland flange.
	e) <i>Two-Piece Gland</i>	A bolted design in which the gland is separate from the gland flange, generally having a self-aligning feature.
	f) <i>Gland Flange</i>	The flange, of a bolted one-piece or two-piece gland, by which pressure is transmitted to the gland.
	g) <i>Gland Bush</i>	A bush which is inserted in a gland.
	h) <i>Gland Bolting</i>	Comprises bolts, eye-bolts, stud bolts, studs, set screws and nuts by which pressure is applied to bolted glands.

<i>Ref No.</i>	<i>Term</i>	<i>Definition</i>
	j) <i>Gland Packing</i>	Material inserted into the stuffing box to prevent leakage of fluid.
113	Stops	Parts integral with or fitted to the valve, to limit the turning angle of the plug.
114	Handwheel	The wheel by which a valve is manually operated (normally applicable to gear-operated valves).
	a) <i>Handwheel-Fixing</i>	Nut, set screw, washer, key, feather or other means to secure the handwheel.

PLUG VALVE ACCESSORIES

115	Wrench	The means by which a wrench-operated valve is manually operated.
116	Bar	The means by which a bar-operated valve is manually operated.

**KEY TO FIG. 1 AND 2 FOR PLUG VALVES
ARRANGED IN ORDER OF PART REFERENCES**

<i>Part Ref</i>	<i>Name of Part</i>	<i>Reference No. of Term</i>	<i>See Fig. No.</i>
1	Body	106	1, 2
2	Body end port	106 a	1, 2
3	Body seat port	106 b	1, 2
4	Body end	106 d	1, 2
5	Body/cover flange	106 f	1
6	Body neck	106 g	1, 2
7	Body seat	106 h	1, 2
8	Body boss	106 j	1
9	Cover	107	1, 2
10	Cover flange	107 a	1, 2
11	Cover bolting	108 a	1, 2
12	Cover gasket	108 b	1, 2
13	Plug	109	1, 2
14	Plug face	109 a	1, 2
15	Plug facing	109 b	1
16	Plug port	109 c	1, 2
17	Plug head	109 d	1, 2
18	Plug shank	109 e	1, 2
19	Stem	110 a	1
20	Lubricant screw	110 b	1, 2
21	Lubricant check valve	110 d	1, 2
22	Indicator	110 e	1, 2
23	Gland	112	1
24	Gland nut	112 b	1
25	One-piece gland	112 d	1
26	Gland flange	112 f	1
27	Gland bush	112 g	1
28	Gland bolting	112 h	1
29	Gland packing	112 j	1
30	Stop	113	1, 2

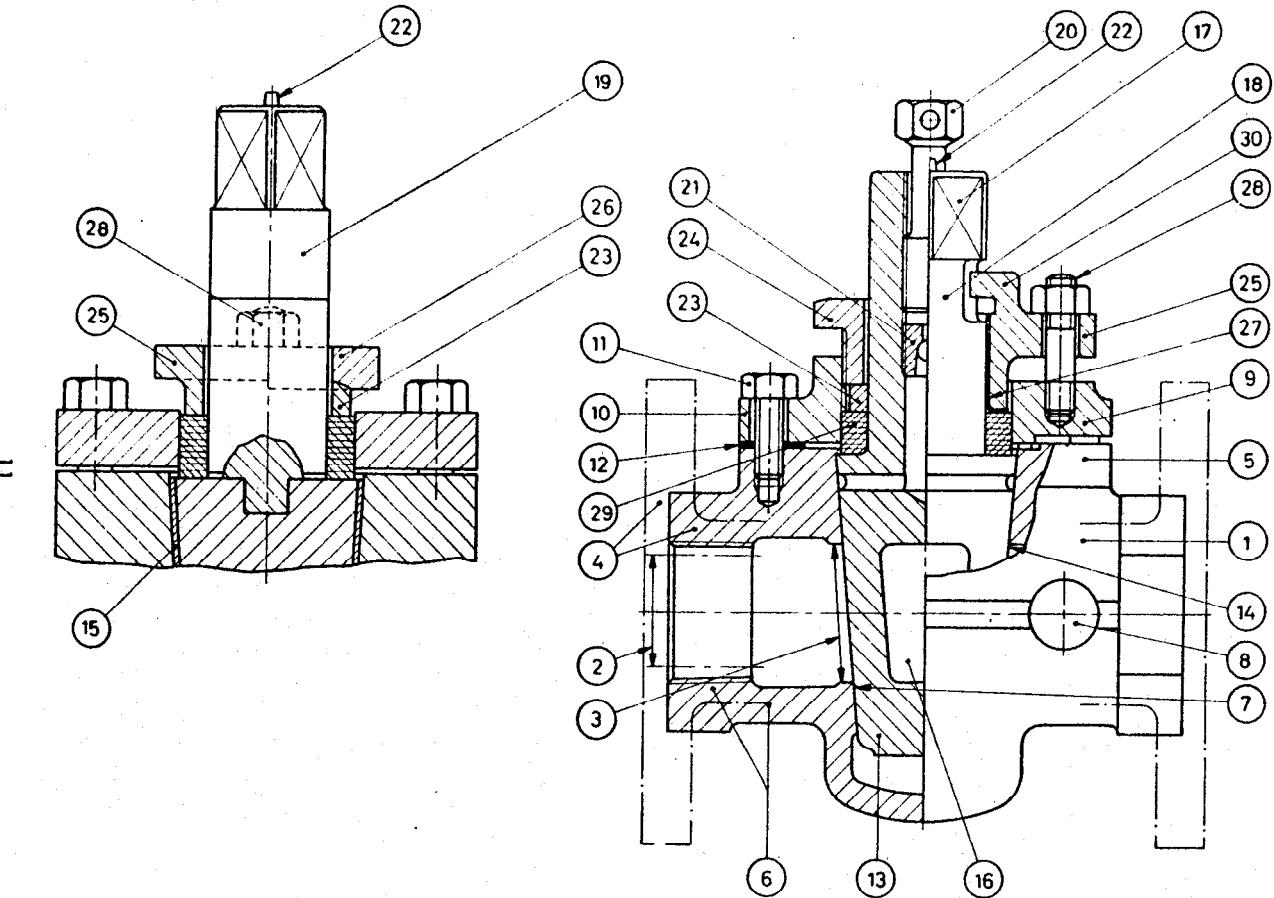


FIG. 1 LUBRICATED PLUG VALVE, TAPER PLUG

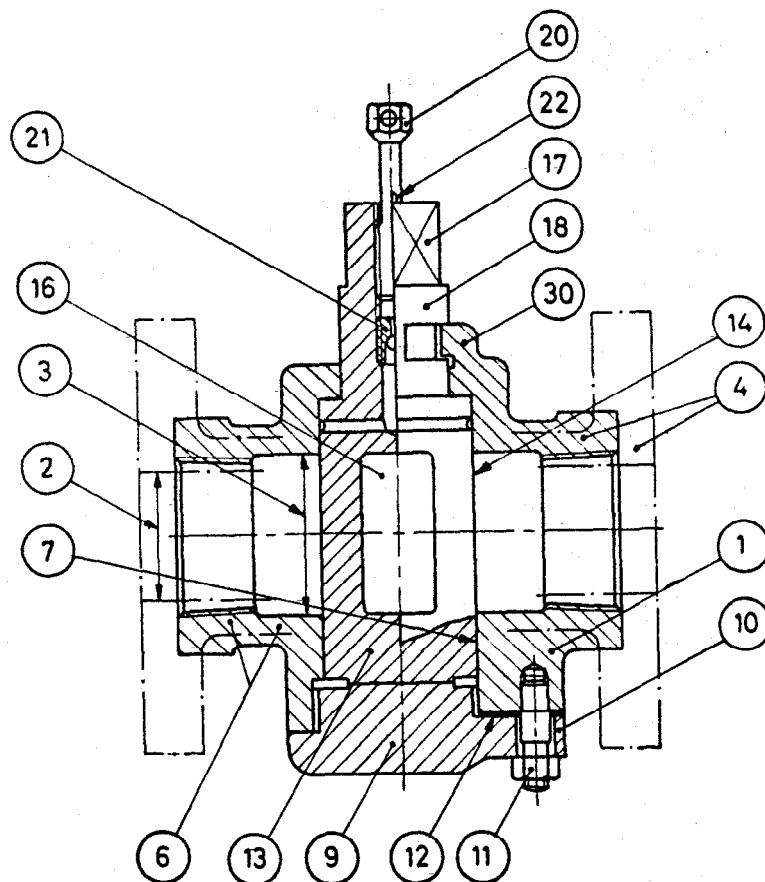


FIG. 2 LUBRICATED PLUG VALVE, PARALLEL PLUG

SECTION 2 COCKS

Ref No.	Term	Definition
201	Cock	A form of shut-off device comprising a body having a parallel or taper or cylindrical setting into which is fitted a plug which may be turned to move its port or ports relative to the body ports to control the flow of fluid. Cocks do not incorporate the design features peculiar to plug valves for reducing the friction between the plug face and body seat (see 101). The cock may be steam jacketed.

TYPES OF COCK

202	Plug Cock	A taper-seated cock in which the plug is retained in the body by means of a washer, screw and nut at the smaller end of the plug.
203	Gland Cock	A taper-seated cock in which the plug is retained in the body by means of a gland and gland packing.
204	Compound Gland Cock	A cock in which the plug is retained in the body by the cover, the stuffing box being formed in the cover.
205	Packed Cock	Any type of cock in which packing material is inserted to effect a seal between the plug face and the body seat.

COCK PARTS

206	Trim	A collective term relating to the materials of certain major internal components which are directly affected by the fluid or by the action of the flow thereof through the cock. Trim relates only to the following components: <ol style="list-style-type: none"> Plug or plug facing, and Body seat.
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Ref No. Term

Definition

		Where the above components are made in materials of similar composition but not necessarily with similar mechanical properties, the cock is referred to as having a trim of that specific material, for example, '13 percent chrome trim'. Where the components are of dissimilar materials, the material of each is specified separately.
207	Body	The main part of the cock in which the flow of fluid is controlled.
	a) <i>Body End Port</i>	The inlet or outlet opening at the end of the cock body.
	b) <i>Body Seat Port</i>	The inlet or outlet opening in the body seat.
		NOTE 1 — Port dispositions (see Fig. 6) may be: 1) straight-way, 2) three-way, and 3) four-way.
		NOTE 2 — Three-way and four-way 'transflow' cocks have port dimensions such that, when the plug is in the intermediate position on being rotated to divert flow from one body seat port to another, there is no cessation of flow.
	c) <i>Body End</i>	That part of the body which connects the cock to the plant or installation of which the cock forms a part. It is not within the scope of this glossary to describe the type or form of the body ends.
	d) <i>Body Neck</i>	That part of the body between the body end and the main portion of the body.
	e) <i>Body Throat</i>	The passage-way between the body end port and the body seat port.
	f) <i>Body Seat</i>	The seating surface in the body with which the plug face makes contact.
	g) <i>Body/Cover Flange</i>	The flange, on the body of a cock, to which the cover is connected.

Ref No.	Term	Definition
208	Cover	That part which closes the body aperture through which access is obtained to the internal parts of the cock.
	a) <i>Cover Flange</i>	The flange which connects a bolted cover to the body/cover flange.
209	Cover Components	Those parts which are associated, but not integral, with the cover.
	a) <i>Cover Bolting</i>	Comprises bolts, stud bolts, studs, set screws and nuts used for the body/cover connection.
	b) <i>Cover Gasket</i>	A component for affecting a fluid-tight joint in a body/cover connection.
210	Plug	That component which is turned within the body to control the flow of fluid.
	a) <i>Plug Face</i>	The surface of the plug or of the plug facing, which makes contact with the body seat.
	b) <i>Plug Facing</i>	A deposit of material, different from that of the plug, on which the plug face is formed.
	c) <i>Plug Port</i>	The passage-way or passage-ways through the plug (see Fig. 6). These may be:
		<ol style="list-style-type: none"> 1) straight-through, 2) tee port, 3) 'L' or angle port, and 4) double 'L' or double angle port.
	d) <i>Plug Head</i>	The part of the plug to which the key or wrench or other operating device is attached.
	e) <i>Plug Shank</i>	The integral part of the plug which passes through the body or cover, and on which the plug head is formed.
	f) <i>Indicator</i>	A device on the plug to show the position of the plug ports.

Ref No.	Term	Definition
211	Plug Components	Those parts which are associated, but not integral with the plug.
	a) <i>Plug Fastenings</i>	Comprise washer, screw and nut, or other device to retain the plug in a plug cock.
	b) <i>Plug Packing</i>	Material inserted in a packed cock to effect a seal between the plug face and the body seat.
	c) <i>Plug Holding-Down Plate</i>	The component, of certain compound gland cocks, which seats the plug.
	d) <i>Plug Holding-Down Plate Fastenings</i>	Comprise bolts, stud bolts, studs, set screws and nuts, used to secure the plug holding-down plate.
212	Stuffing Box	The part of the body or cover which provides an annular space around the shank to contain the gland and the gland packing.
213	Gland	A part which retains and forms a means of compressing the packing. Glands are usually of the screwed or bolted type.
	a) <i>Screwed Gland</i>	The type of gland which is adjusted by a nut which engages the stuffing box.
	b) <i>Gland Nut</i>	The nut of a screwed gland, by which pressure is transmitted to the gland.
	c) <i>Bolted Gland</i>	The type of gland which is adjusted by bolts, studs, set screws, etc, attached to the body or cover.
	d) <i>Gland Flange</i>	The flange of a bolted gland by which pressure is transmitted to the gland.
	e) <i>Gland Bolting</i>	Comprises bolts, eye-bolts, stud bolts, studs, set screws and nuts by which pressure is applied to bolted glands.
	f) <i>Gland Packing</i>	Material inserted into the stuffing box to prevent leakage of fluid and for gland cocks, to retain the plug in the body.

Ref No.	Term	Definition
214	Stops	Parts integral with, or fitted to, the cock, to limit the turning angle of the plug.

COCK ACCESSORIES

215	Key or Wrench	A lever, which may be integral with, or separate from the plug, by which the cock is manually operated.
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KEY TO FIG. 3 TO 5 FOR COCKS ARRANGED IN ORDER OF PART REFERENCES

Part Ref	Name of Part	Reference No. of Term	See Fig. No.
1	Body	207	3, 4, 5
2	Body end port	207 a	3, 4, 5
3	Body seat port	207 b	3, 4, 5
4	Body end	207 c	3, 4, 5
5	Body neck	207 d	3, 4, 5
6	Body seat	207 f	3, 4, 5
7	Cover	208	5
8	Cover bolting	209 a	5
9	Cover gasket	209 b	5
10	Plug	210	3, 4, 5
11	Plug face	210 a	3, 4, 5
12	Plug port	210 c	3, 4, 5
13	Plug head	210 d	3, 4, 5
14	Plug shank	210 e	4, 5
15	Indicator	210 f	3, 4, 5
16	Plug fastenings	211 a	3
17	Plug holding-down plate	211 c	5

18	Gland	213	4, 5
19	Gland bolting	213 e	5
20	Gland packing	213 f	4, 5
21	Stop	214	3
22	Body/cover flange	207 g	5
23	Cover flange	208 a	5

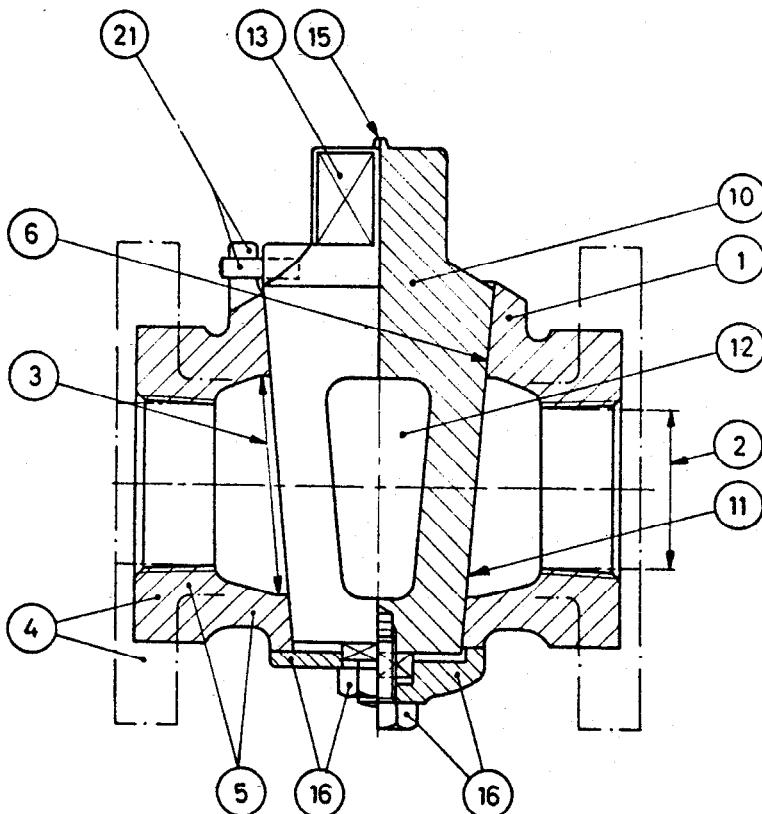


FIG. 3 PLUG COCK

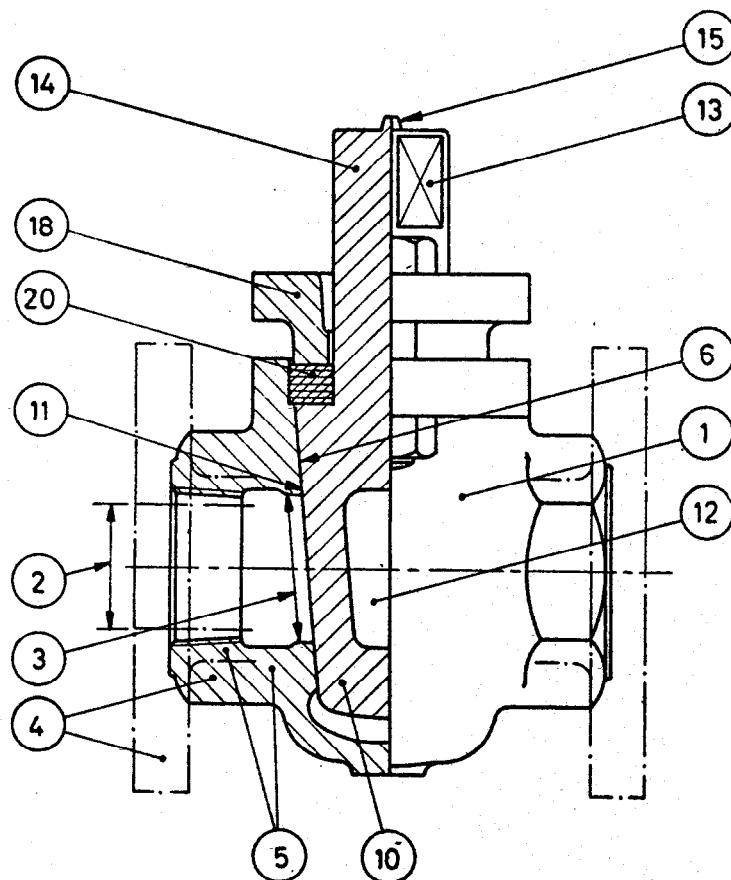


FIG. 4 GLAND COCK

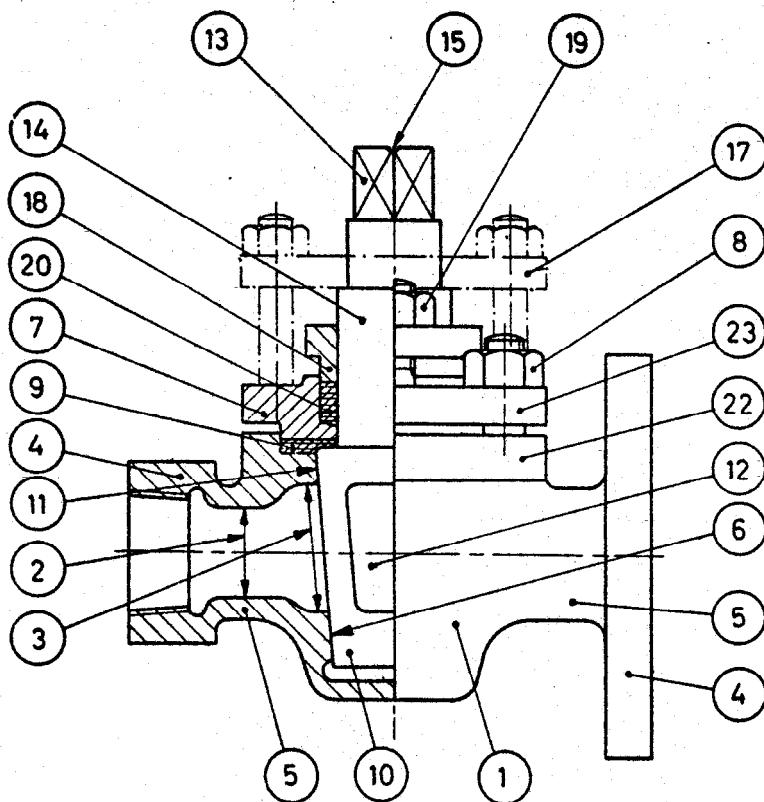
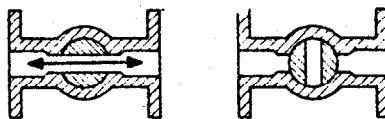
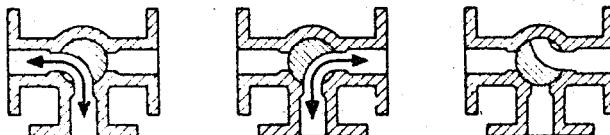


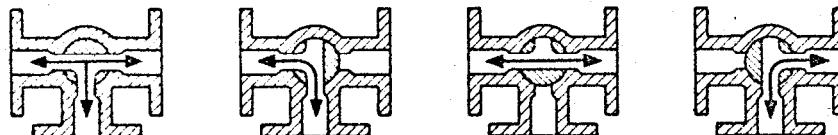
FIG. 5 COMPOUND GLAND COCK



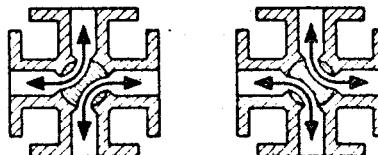
POSSIBLE POSITIONS OF STRAIGHT TROUGH PORTED PLUG IN A STRAIGHT-WAY PORTED BODY



POSSIBLE POSITIONS OF 'L' OR ANGLE PORTED PLUG IN A THREE-WAY PORTED BODY



POSSIBLE POSITIONS OF TEE PORTED PLUG IN A THREE-WAY PORTED BODY



POSSIBLE POSITIONS OF DOUBLE 'L' DOUBLE ANGLE PORTED PLUG IN A FOUR-WAY PORTED BODY

FIG. 6 POSSIBLE POSITIONS OF PLUG IN BODY AND PARTS IN PLUG

(Continued from page 2)

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